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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,288	09/18/2006	Munetaka Watanabe	Q81522	8457

23373 7590 09/21/2009

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EXAMINER	
JAHAN, BILKIS	
ART UNIT	**PAPER NUMBER**
2814	
MAIL DATE	**DELIVERY MODE**
09/21/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,288	WATANABE ET AL.	
	Examiner	Art Unit	
	BILKIS JAHAN	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/16/09 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura (US 6,331,450 B1) in view of Chen et al (US 6,642,549 B2).

Regarding claim 12, Uemura discloses a gallium nitride-based compound (Fig. 1, col. 4, lines 40-41) semiconductor light-emitting device (Fig. 1, col. 4, lines 40-41), comprising a transparent positive electrode 113 (Fig. 1, col. 5, lines 15-16) having

- a contact metal layer 111 (Fig. 1, col. 5, lines 10-11) in contact with a p-type semiconductor layer 106 (Fig. 1, col. 4, line 57),
- a current diffusing layer 112 (Fig. 1, col. 5, line 13-14) on the contact metal layer 111 (Fig. 1, col. 5, lines 10-11), the current diffusing layer having an electrical conductivity larger than that of the contact metal layer (inherent since materials are same), and
- Uemura does not explicitly disclose a bonding pad layer is on the current diffusing layer. However, Chen et al discloses a bonding pad layer 113 (Fig. 1, col. 3, line 35) is on the current diffusing layer 111 (Fig. 1, col. 3, line 29, Abstract). Chen teaches the above modification is used to improve the efficiency of the device (col. 1, lines 56-57). It would have been obvious to one of the ordinary skill of the art at the time of invention to add Uemura's structure with Chen's structure as suggested above to improve the efficiency of the device (col. 1, lines 56-57).
- Uemura does not explicitly disclose the thickness of the contact metal layer is from 0.1 to 7.5 nm. However, Uemura discloses the contact metal layer thickness is 0.3 micro meter (col. 5, lines 10-13).
- However, it would have been obvious to one of ordinary skill in the art to **use any suitable thickness for the device**, because it has been held that where the general conditions of the claims are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. See In re Alner, 220 F .2d 454, 105 USPQ 233, 235 (CCPA 1955) (see MPEP 2144.04).

Regarding claims 13, 14, Uemura further discloses the contact metal layer is a platinum group metal 111 (Fig. 1, col. 5, lines 10-11) or an alloy containing a platinum group metal and the contact metal layer is platinum 111 (Fig. 1, col. 5, lines 10-11).

Regarding claims 17, 18, Uemura discloses some limitations in claim 1 above but does not disclose the current diffusing layer 112 (Fig. 1, col. 5, line 13-14) is a metal selected from the group consisting of gold 112 (Fig. 1, col. 5, line 13-14), silver and copper, or an alloy containing at least one member of gold, silver and copper and the current diffusing layer is gold 112 (Fig. 1, col. 5, line 13-14).

Regarding claim 15-16, 19-21, Uemura discloses limitations in claim 1 but does not disclose the thickness of the contact metal layer is from 0.1 to 5 nm; wherein the thickness of the contact metal layer is from 0.5 to 2.5 nm; the thickness of the current diffusing layer is from 1 to 20 nm; the thickness of the current diffusing layer is from 1 to 10 nm; the thickness of the current diffusing layer is from 3 to 6 nm. However, it would have been obvious to one of ordinary skill in the art to **use any suitable thickness for the device**, because it has been held that where the general conditions of the claims are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. See In re Alner, 220 F .2d 454, 105 USPQ 233, 235 (CCPA 1955).

Response to Arguments

Applicant's arguments with respect to claims 12-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BILKIS JAHAN whose telephone number is (571)270-5022. The examiner can normally be reached on M-F, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571)-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BJ

/Howard Weiss/
Primary Examiner
Art Unit 2814